

## 5 CLAIMS:

1. A process for extracting a metal from a refractory material containing the metal, the process comprising fine grinding the material, subjecting the ground material to a leaching step in the presence of an alkaline material and an oxidizing agent, adjusting the leaching step such that 10 the amount of oxidation is between 9%-20%, and subjecting the partially oxidized material to a cyanide extraction step to recover the metal.
2. The process of claim 1, wherein the refractory material comprises a sulphide, a carbonaceous, a pyrite, an arsenopyrite, or a stibnite ore or concentrate.
- 15 3. The process of claim 1, wherein the material is ground to a p80 of < 20 microns.
4. The process of claim 1, wherein the alkaline material is selected from lime and limestone.
5. The process of claim 4, wherein the pH of the leaching step is 20 between 5-7.
6. The process of claim 1, wherein the amount of oxidation is between about 9% to about 12%.
7. The process of claim 1, wherein the oxidizing agent is oxygen.
8. The process of claim 1, wherein the leaching step is conducted 25 at a temperature of between 60-95°.
9. The process of claim 1, wherein the leaching step is carried out at 1 atmosphere or less.
10. The process of claim 1, wherein the metal is gold or silver.
11. A process for extracting gold or silver from a refractory material 30 containing gold or silver, the process comprising fine grinding the material to a p80 of < 20 microns, subjecting the ground material to a leaching step in the presence of an alkaline material which comprises lime and/or limestone and an oxidizing agent which comprises oxygen, maintaining the pH of the leaching step between 5-7, maintaining the temperature between 60-85 degrees C, adjusting the leaching step such that the amount of oxidation is 35 between about 9%-about 12%, and subjecting the partially oxidized material to a cyanide extraction step to recover the gold or silver.